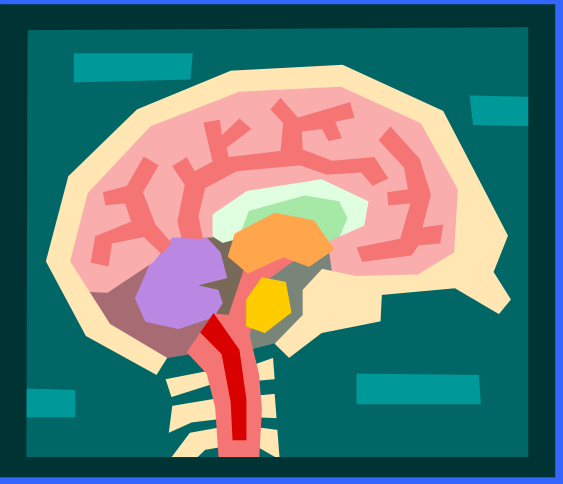


Patient Care Review: TBI

2LT Valerie Steger

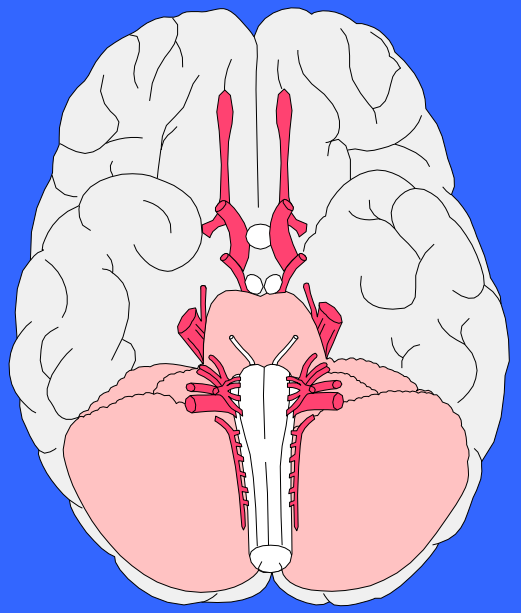
25 Jan 02

Traumatic Brain Injury

- 1 million a year treated & released
- 200,000 will die
- 200,000 will require institutionalization

- Currently 5 million people living with TBI

TBI



- Traumatic Brain Injury
  - Condition characterized by changes that occur when a particular area of the brain is struck, penetrated, or pierced.
  - Most often caused by MVA, industrial accidents, falls, fights, explosions, GSW.

Etiology

- Initial trauma
  - Loss of speech, mobility, motor control
- Secondary trauma
  - coordination, balance, memory, judgment
- Swelling
  - consciousness and communication

Symptoms

- Symptoms include:
  - Dyspnea, vertigo, altered consciousness, seizures, vomiting, altered blood pressure, weakness or paralysis, aphasia, problems with physical control of hands, head, or neck resulting difficulty in self-feeding.

Classification

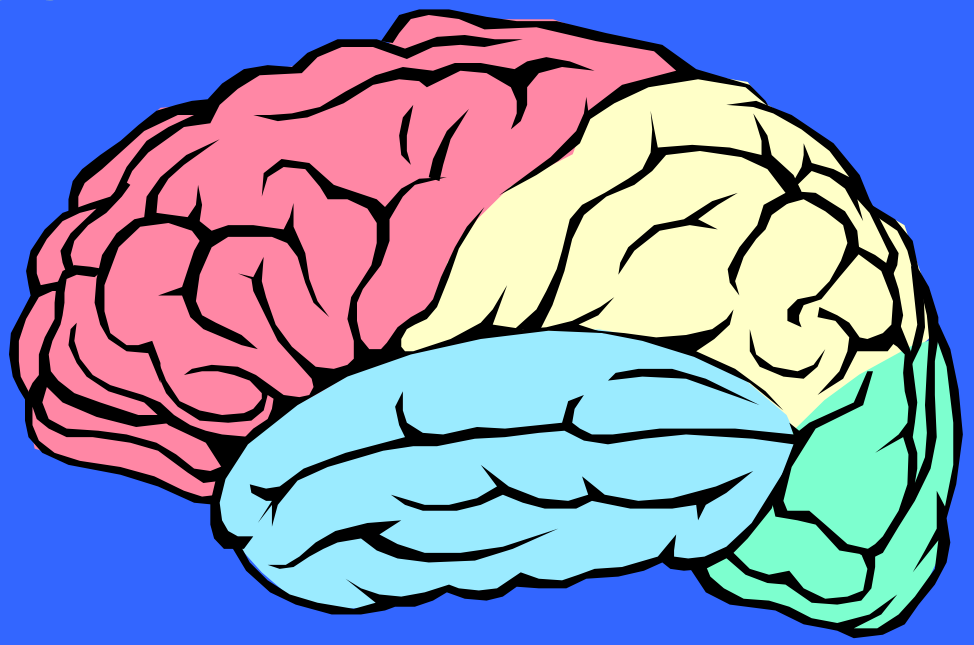
- Injury is classified by:
  - Location
  - Effect
  - Severity
- Glascow Coma Scale
  - 14-15 minor
  - 9-13 moderate
  - < 8 severe

Treatment

- Short-term
  - Trauma
- Long-term
  - Multidisciplinary: PT, OT, Speech, Recreational Therapy, neuropsychological serves along with nursing care

Nutritional Implications

- Baseline Nutritional Status
- Increased Needs
- Feeding Issues

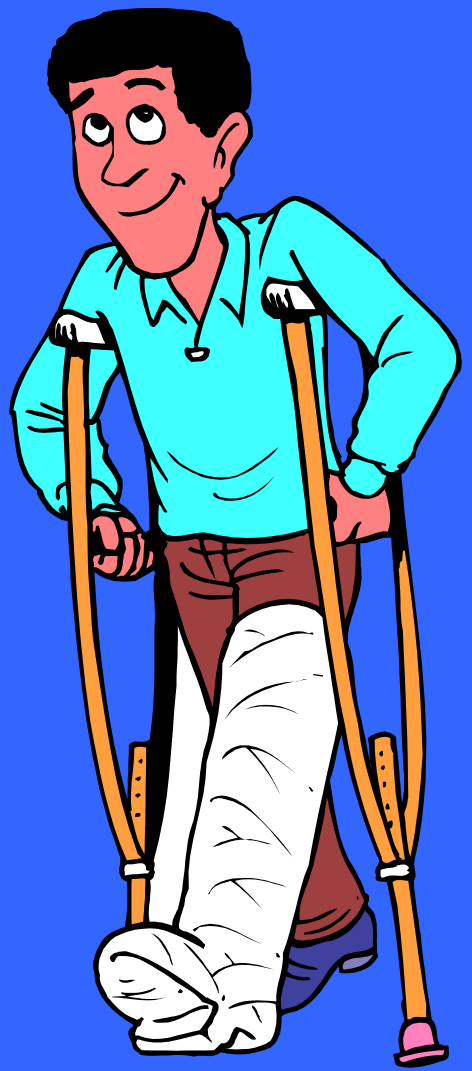


SSG JEB

- 23 AAM
- 19 Jan 02 – WRAMC
- 20 Dec 01 – Italy
- MVA with tree- restrained driver
- Traumatic Brain Injury, Fracture of Tib/Fib
- WRAMC Trauma MNT Care Plan

SSG JEB PMH/PSH

- PMH- Unremarkable
- PSH- s/p ORIF
- PEG
- Trach

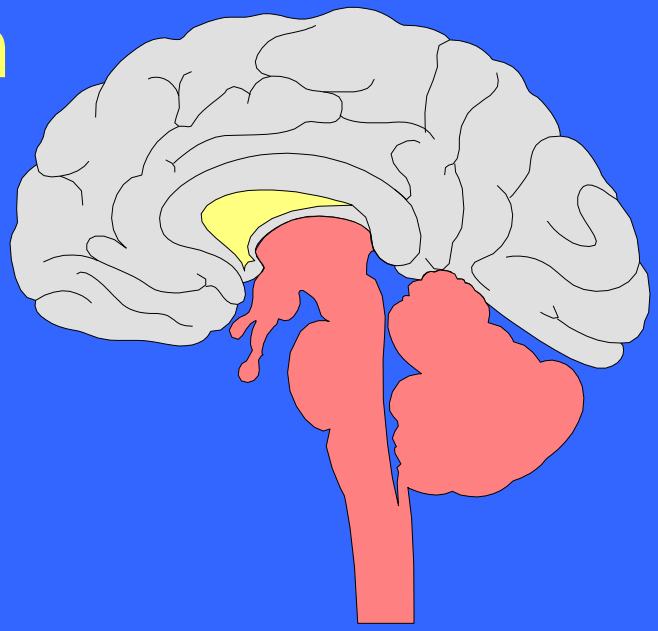


SSG Social & Family Hx

- Wife active duty in Italy with young daughter
- Mother in Maryland
- Emergent MEB
- Admitted as USA Family Member

Current Treatment

- 4x4x2.5 right anterior intercranial hematoma, stable
- Evaluation for rehab potential
- Disposition



Nutrition History

- Before accident
  - Regular
- Italy
  - Mechanical soft
- Admit diet order
  - Ensure HP 250 q4
    - 1500 kcal, 75g Pro

Physical Exam

- 69” 169 # (77 kg)
- UBW: 189 # (86 kg) Dec
- Wrist circ: 16.5 cm
- DBW: 144-154# (MHWT, small)
- %DBW: 109% % UBW: 90%

Medications

- Zantac- Anti-ulcer-decreases gastric acid secretions and B12 abs, increases pH
- Heparin- Anticoagulation, ab pain, GI bleeding, constipation

Labs

Lab Test	Normal	Value
Albumin	3.5-5.0	3.0
Prealbumin	19-39	25.4
Hct	42-52%	31.2%
Hgb	14-18	10.4

Nutritional Diagnostic Statement

Pt currently has good nutritional status as evidenced by good prealbumin, 109% DBW, ate well PTA, willingness to eat currently. Pt may be at future nutritional risk if enteral feed continues to be below estimated needs.

Needs

- Kcal: HB x 1.4 (SF) x 1.1 (AF)= 2800 kcals
- Calorie Factor: 34-40 kcal/kg= 2700-3000 kcals
- Protein: 1.5-2.0 g/kg= 115-154 g

Diet Order Recommendation

- Promote with fiber @ goal rate 2 cans q4 provides 2844 kcals and 177 g Pro.
- Start at 1 can q4
- then advance ½ can every 12 hours if residuals <200 cc and pt is tolerating well.

Nutritional Plan

- Add mechanical soft diet per speech path recs
- Recommend MVI esp. vit A, C, D, zinc, Calcium, and phosphorous.
- Avoid excessive vit D and Calcium during immobilization.

Goal of Therapy

- To prevent malnutrition and promote wound healing.

Potential Health Outcomes

- Quicker recovery
- Less complications
- More strength for rehab

Potential Resources Saved

- Hospital services
- Retirement benefits

Military

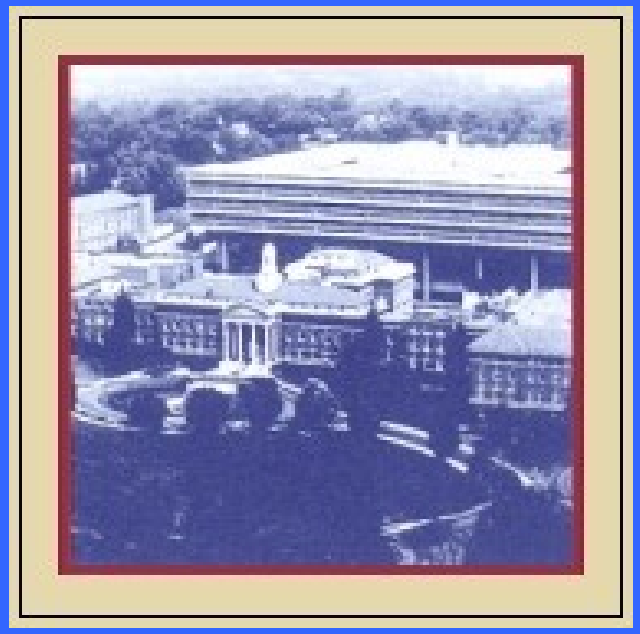
- 7,000 peacetime TBI admissions/year
- $30M medical retirement payments/year

Treatment

- DVHIP
  - WRAMC Specialized Brain Injury Center
  - Hunter McGuire VA Medical Center

Scientific Research

- WRAMC
  - In-patient vs. home rehab
  - $51,000 vs. $500



Questions???